## Supporting Information

## Light- and Heat-Triggered polyurethane based on dihydroxyl anthracene derivatives for self-healing applications

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 Table S1 the molecular weight (Mn) and polydispersity index (PDI) of different

 PUAn samples.

Molecular weight	Samples			
	PUAn0	PUAn1	PUAn4	PUAn8
Mn(g·mol <sup>-1</sup> )	52100	49700	46600	48300
PDI	2.13	2.63	2.35	2.72



Fig. S1 The sol-gel transformation process of the solution of PUAn8 after being irradiated with UV-light source ( $\lambda$ >300 nm) for 10 min.



**Fig. S2** Micrographs of PUAn1 (A), PUAn4 (B) and PUAn8 (C) films, which belongs to the freshly cracked (left) and the maintained in the dark condition at room temperature for 5 hours (right), were taken under white light and UV light (365nm) respectively.